

Application No. 10/031,399  
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(KUS.002)

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AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A disc player comprising:  
a positioning unit for positioning a disc;  
a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and  
a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup, wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit, and  
wherein said positioning unit positions said disc in a direction parallel to said drive unit.
2. (Previously presented) The disc player as claimed in claim 1, wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate.
3. (Original) The disc player as claimed in claim 2, wherein said step plate and said clamp plate are moved in synchronism with each other and vertically to said drive plate by the movement of said cam plate.

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4. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamper unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate, and

The disc player as claimed in claim 2,

wherein fit members which are provided to said step plate and said clamp plate and engaged with said cam grooves of said cam plate comprise fit pawls that are integrally formed by bending and erecting.

5. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamper unit to take out information from the disc by said pickup,

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wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate,

~~The disc player as claimed in claim 2,~~

wherein said step plate and said clamp plate comprise fit pawls, and

wherein said fit pawls of said step plate and said clamp plate are integrally formed by bending and erecting in a forming process thereof.

6. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit, and

~~The disc player as claimed in claim 1,~~

wherein said positioning unit is designed to position plural kinds of discs including different sizes.

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7. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamper unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit, and

The disc player as claimed in claim 1,

wherein said positioning unit includes a step plate, a G plate which is freely rotatably provided to said step plate and includes, at one end thereof, a disc stopper on which a disc can be supported, and a sensor arm including, at one end thereof, an arm rod that can be fitted to the disc, the fitting positions of the other ends of said G plate and said sensor arm being changeable in accordance with plural discs different in diameter such that the discs can be positioned.

8. (Previously presented) The disc player as claimed in claim 1, wherein the moving amounts of said positioning unit and said clamper unit include different values.

9. (Previously presented) The disc player as claimed in claim 8, wherein the moving amount of said clamper unit includes a value larger than that of said positioning unit.

10. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

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a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein the moving amounts of said positioning unit and said clamper unit include different values, and

~~The disc player as claimed in claim 8,~~

wherein the moving amount of said positioning unit is set such that a vibration-isolation stroke can be kept, and the moving amount of said clamper unit is set such that the vibration-isolation stroke can be kept and the clearance between said clamper unit and said clamper ring for clamping said disc onto said turntable can be kept.

11. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to

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a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate,

wherein said step plate and said clamp plate are moved in synchronism with each other and vertically to said drive plate by the movement of said cam plate, and

~~The disc player as claimed in claim 3,~~

wherein fit members which are provided to said step plate and said clamp plate and engaged with said cam grooves of said cam plate comprise fit pawls that are integrally formed by bending and erecting.

12. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clasper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clasper unit to take out information from the disc by said pickup,

wherein said positioning unit and said clasper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clasper unit are engaged with a cam groove of a cam plate movable in parallel to a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate,

wherein said step plate and said clamp plate are moved in synchronism with each other and vertically to said drive plate by the movement of said cam plate,

~~The disc player as claimed in claim 3,~~

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wherein said step plate and said clamp plate comprise fit pawls, and  
wherein said fit pawls of said step plate and said clamp plate are integrally formed  
by bending and erecting in a forming process thereof.

13. (Previously presented) The disc player as claimed in claim 4, wherein said fit  
pawls of said step plate and said clamp plate are integrally formed by bending and  
erecting in a forming process thereof.

14. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said  
positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on  
the turntable by said clamp unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from  
each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped  
to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to  
a drive plate equipped to said drive unit, and are movable vertically to said drive plate by  
movement of said cam plate, and

~~The disc player as claimed in claim 2,~~

wherein said positioning unit is designed to position plural kinds of discs including  
different sizes.

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15. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate,

wherein said step plate and said clamp plate are moved in synchronism with each other and vertically to said drive plate by the movement of said cam plate, and

The disc player as claimed in claim 3,

wherein said positioning unit is designed to position plural kinds of discs including different sizes.

16. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup,



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wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate, and

~~The disc player as claimed in claim 2,~~

wherein said positioning unit includes a step plate, a G plate which is freely rotatably provided to said step plate and includes, at one end thereof, a disc stopper on which a disc can be supported, and a sensor arm including, at one end thereof, an arm rod that can be fitted to the disc, the fitting positions of the other ends of said G plate and said sensor arm being changeable in accordance with plural discs different in diameter such that the discs can be positioned.

17. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein a step plate equipped to said positioning unit and a clamp plate equipped to said clamper unit are engaged with a cam groove of a cam plate movable in parallel to

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a drive plate equipped to said drive unit, and are movable vertically to said drive plate by movement of said cam plate,

wherein said step plate and said clamp plate are moved in synchronism with each other and vertically to said drive plate by the movement of said cam plate, and

The disc player as claimed in claim 3,

wherein said positioning unit includes a step plate, a G plate which is freely rotatably provided to said step plate and includes, at one end thereof, a disc stopper on which a disc can be supported, and a sensor arm including, at one end thereof, an arm rod that can be fitted to the disc, the fitting positions of the other ends of said G plate and said sensor arm being changeable in accordance with plural discs different in diameter such that the discs can be positioned.

18. (Previously presented) The disc player as claimed in claim 2, wherein the moving amounts of said positioning unit and said clamper unit include different values.

19. (Previously presented) The disc player as claimed in claim 3, wherein the moving amounts of said positioning unit and said clamper unit include different values.

20. (Currently amended) A disc player comprising:

a positioning unit for positioning a disc;

a clamper unit for performing a clamp operation on the disc positioned by said positioning unit; and

a drive unit that includes a pickup and a turntable, and rotates the disc clamped on the turntable by said clamp unit to take out information from the disc by said pickup.

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wherein said positioning unit and said clamper unit are provided separately from each other and are movable substantially vertically to said drive unit,

wherein the moving amounts of said positioning unit and said clamper unit include different values,

wherein the moving amount of said clamper unit includes a value larger than that of said positioning unit, and

~~The disc player as claimed in claim 9,~~

wherein the moving amount of said positioning unit is set such that a vibration-isolation stroke can be kept, and the moving amount of said clamper unit is set such that the vibration-isolation stroke can be kept and the clearance between said clamper unit and said clamper ring for clamping said disc onto said turntable can be kept.

21. (Canceled).

22. (Previously presented) The disc player as claimed in claim 1, wherein said positioning unit positions said disc in a direction other than vertically to said drive unit.

23. (Currently amended) The disc player as claimed in claim 1, wherein said disc comprises one of a plurality of discs comprising different diameters.

24. (Previously presented) The disc player as claimed in claim 23, wherein said positioning unit positions one of said plurality of discs in a direction parallel to said drive unit based on a diameter of said one of said plurality of discs.

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25. (Previously presented) The disc player as claimed in claim 23, wherein said positioning unit is operable to position said plurality of discs in a direction parallel to said drive unit based on said different diameters of said plurality of discs.

26. (Previously presented) The disc player as claimed in claim 25, wherein said positioning unit comprises:

a step plate,

a plate which is freely rotatably provided to said step plate,

wherein said plate includes, at one end thereof, a disc stopper on which a disc can be supported; and

a sensor arm including, at one end thereof, an arm rod that can be fitted to the disc, wherein the fitting positions of other ends of said plate and said sensor arm are changeable in accordance with said plurality of discs comprising different diameters such that any one of said plurality of discs including different diameters can be positioned in said direction parallel to said drive unit for rotating by said drive unit.

27. (Previously presented) The disc player as claimed in claim 1, wherein said positioning unit positions said disc in a direction parallel to said drive unit and aligns said disc for rotating by said drive unit.

28. (Currently amended) The disc player as claimed in claim 1, wherein said disc comprises one of a plurality of discs comprising different diameters, and

wherein said positioning unit positions one of said plurality of discs in a direction parallel to said drive unit based on a diameter of said one of said plurality of discs such

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that said one of said plurality of discs is aligned with said drive unit for rotating by said drive unit.

29. (Previously presented) The disc player as claimed in claim 8, wherein the moving amounts of said positioning unit and said clamper unit comprise vertical moving amounts with respect to said drive plate.

30. (Previously presented) The disc player as claimed in claim 9, wherein the moving amounts of said positioning unit and said clamper unit comprise vertical moving amounts with respect to said drive plate.

31. (Currently amended) A method of playing a disc in a disc player-method, the method comprising:

positioning a disc in a lateral direction;

performing a vertical clamping operation on the disc after said disc is laterally positioned for clamping said disc on a turntable; and

rotating said disc clamped on said turntable by said clamping to take out information from the disc by said pickup,

wherein said positioning unit and said clamper unit are provided separately from each other and movable substantially vertically to said drive unit, and

wherein said positioning unit positions said disc in a direction parallel to said drive unit.

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32. (Previously presented) A disc player, comprising:
- means for positioning a disc in a lateral direction for rotating by a drive unit and to take out information from the disc by a pickup of said drive unit; and
- means for performing a vertical clamping operation on the disc after said disc is laterally positioned for rotating said disc on a turntable of said drive unit,
- wherein said means for positioning and said means for clamping are provided separately from each other and movable substantially vertically to said drive unit.
33. (Previously presented) The disc player as claimed in claim 32, wherein said means for positioning and said means for clamping are synchronously moved substantially vertically to said drive unit.
34. (Currently amended) The disc player as claimed in claim 32, wherein said disc comprises one of a plurality of discs including different diameters, and
- wherein said means for positioning comprises means for positioning in a lateral direction said one of said [[a]] plurality of discs including different diameters for rotating by said drive unit.
35. (Previously presented) The disc player as claimed in claim 32, wherein said means for positioning and said means for clamping maintain a vibration-isolation stroke.
36. (Previously presented) The disc player as claimed in claim 32, wherein said means for clamping comprises a rotatable means for clamping said disc onto said turntable, and

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wherein said rotatable means for clamping is freely rotatable from said means for clamping.

37. (Previously presented) The disc player as claimed in claim 36, wherein said means for positioning and said means for clamping are synchronously moved substantially vertically to said drive unit so as to maintain a clearance between said means for clamping and said rotatable means for clamping said disc onto said turntable.

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